OCT 17 1925

STATISTICAL BULLETIN

Metropolitan Life Insurance Co.

VOL. VI. SEPTEMBER, 1925 No. 9

INCREASING LIFE-SPAN OF THE AMERICAN AND CANADIAN INDUSTRIAL POPULATION.

Among wage-workers and their families in the United States and Canada, the year 1924, in respect to longevity, was the best one on record in public health history! The expectation of life at birth in industrial families was 55.62 years, a more favorable figure even than the remarkable record of the year 1921 and an increase of nearly nine years since 1911-1912. The expected after-life-span for the wage-working population, in 1924, was approximately the same as that for the general population, which includes the better circumstanced classes of the nation, only ten years ago.

The increase for insured wage-earners between 1911-1912 and 1924 was about nine years. The figure for 1924 in the general population of the United States Registration Area is not yet available, but a comparison with that for 1923 shows a gain of only 4.3 years since 1911-1912.

In the following table, we show the spread in life expectancy for insured wage-earners since 1911.

Expectation of Life at Birth. Metropolitan Life Insurance Company. Industrial Department, 1911 to 1924.

Year	Expectation in Years
1924	55.62
1923	54.55
1922	55.04
1921	55.08
1919-1920	51.14
1911-1912	46.63
Gain, 1924 since 1911-1912	8.99

Since 1911-1912 the gain among the Industrial policyholders has been 19 per cent. in the expected after-lifetime! Who, fourteen years ago, could have predicted an extension of nearly one-fifth in the longevity of the wage-working population by the end of 1924? Intensive and continuous public health work and the rise in living standards for this class of the population, however, have brought about a more remarkable improvement in health conditions than has occurred in any similar period in human history.

Progress at the different age periods above 10 years for persons in the several color and sex groups of the industrial population is shown below:

Expectation of Life at Selected Ages Above 10 Years. By Color and Sex. Metropolitan Life Insurance Company. Industrial Department.

Age	Total Industrial Department		WHITE				COLORED			
			Males		Females		Males		Females	
	1924	1911–1912	1924	1911–1912	1924	1911–1912	1924	1911–1912	1924	1911–1912
10	52.62	47.43	51.77	45.61	55.10	50.66	45.71	41.32	46.63	41.30
20	43.87	39.01	42.93	36.87	46.20	42.02	37.61	34.16	38.88	35.14
30	35.78	31.70	34.53	29.36	37.96	34.47	30.44	27.95	32.16	29.32
40	27.94	24.98	26.54	22.94	29.76	27.00	23.76	21.91	25.46	23.25
50	20.63	18.41	19.38	16.98	21.92	19.67	17.77	16.09	19.01	17.34
60	14.09	12.47	13.23	11.50	14.84	13.20	12.57	11.21	13.51	12.20
70	8.79	8.02	8.25	7.30	9.17	8.41	8.33	7.69	9.39	8.61

At every age division of life, there has been a gain in the expected after-life-span, the more pronounced advances being made at the earlier ages. One of the noteworthy features of the Metropolitan's figures is the prolongation of the lives of colored people. At age 10, there was an increase of 4.4 years in the expectation for colored males and of 5.3 years for colored females. These facts are strongly indicative of a fundamental, favorable change in health conditions for the American negro; and, considering the conditions of life under which this group of the population has lived for many decades, it is a truly remarkable showing. The figures point clearly to the possibility for further improvement in the condition of the negro in America, a prospect which carries with it many favorable implications for the white race also.

Altogether, these facts and figures show real progress toward a higher civilization in which the interests of the wage-earners have been advanced at a rate without precedent in modern times.

LOW MORTALITY AMONG INFANTS OF WAGE-EARNERS.

In the August BULLETIN, we commented on the marked saving of infant lives which had occurred since the beginning of the present century in the general population as reflected in the mortality statistics of the United States Registration Area.

The data now presented relate to the infants of American and Canadian wage-earners' families. These show that among them also, a particularly low deathrate prevails. And this is true, not only with respect to the rate for all causes combined, but for those diseases which are of paramount public health interest—those which are "preventable" and upon which the efforts of sanitary science have been most concentrated. The table on page 4 shows the deathrates for the babies in the Industrial population in 1924 in comparison with those prevailing in the general population in 1922, the latest year for which figures are available.

The low figure, 38.9 per 1,000, is not directly comparable with that of 80.8 per 1,000 for the general population. The difference in favor of insured babies is due largely to the fact that only a very small proportion of the insured are in those first few weeks of life where the mortality is highest. But when comparison is made for the separate age groups, the excellent record of insured babies is evident.

The comparison for all causes of death combined, in every one of the age groups but one, shows that the insured infants have a more or less distinct advantage. In the latest age group of infancy, the mortality is substantially identical with that of the children in the general population.

The record is favorable to insured infants for a number of diseases. The figures for diarrhea and enteritis favor the insured babies in four of the six age divisions. In like manner, bronchitis, congenital malformations, premature birth, injury at birth, and "other conditions peculiar to early infancy," had lower deathrates among insured babies at every age group. The record for "congenital debility" shows lower mortality for insured infants at every age period except the first week. The record for diphtheria is altogether favorable to Metropolitan infants. The only condition for which better records are obtained, in most age groups of infancy, for babies in the general population are measles, infantile convulsions, and whooping cough.

On the whole, the showing for these insured children is a remarkable one. It must be remembered that they are a group of city babies, few of whom enjoy the health benefits that we associate

Deathrates per 100,000 Lives Exposed for Principal Causes of Death at Specified Age Periods Under One Year of Age. Metropolitan Life Insurance Company, Industrial Department, 1924, and United States Birth Registration Area, 1922 Compared.

CAUSE OF DEATH	Total—Under 1 Year		Under 1 Week		1 Week, Under 1 Month		1 Month, Under 3 Months		3 Months, Under 6 Months		6 Months, Under 9 Months		9 Months, Under 1 Year	
	M. L. I. Co., Ind'l	U. S. Birth Reg. Area	M. L. I. Co., Ind'l	U. S. Birth Reg. Area	M. L. I. Co., Ind'l	U. S. Birth Reg. Area	M. L. I. Co., Ind'l	U. S. Birth Reg. Area	M. L. I. Co., Ind'l	U. S. Birth Reg. Area	M. L. I. Co., Ind'l	U. S. Birth Reg. Area	M. L. I. Co., Ind'l	U. S. Birth Reg. Area
All Causes	3,892.8	8,084.6	59,285.7	153,164	7,393.5	17,436.4	6,041.4	6,895.5	4,274.4	4,526.2	3,074.1	3,492.5	2,904.0	2,823.7
Measles	85.7	63.9	.....	9.0	12.1	25.6	15.0	20.3	44.3	33.1	99.5	78.1	152.9	125.4
Whooping cough	214.0	153.2	.....	21.0	85.0	145.5	327.0	214.8	198.3	149.9	202.5	146.3	198.9	134.3
Diphtheria	34.0	50.1	.....	66.0	36.4	71.4	12.5	37.0	30.0	28.1	27.1	50.5	55.9	74.1
Influenza-pneumonia	1,163.8	1,320.1	4,285.7	2,660.1	1,481.1	2,440.1	1,547.8	1,619.7	1,233.9	1,266.3	1,017.9	1,114.3	1,028.1	968.1
Influenza	110.9	176.3	.....	302.9	182.1	305.7	117.3	203.4	105.7	177.5	121.0	150.7	94.5	137.4
Pneumonia—All forms	1,052.9	1,143.8	4,285.7	2,357.2	1,299.0	2,134.4	1,430.5	1,416.3	1,128.3	1,088.8	896.9	963.7	933.6	830.7
Tuberculosis of meninges	47.6	44.5	.....	15.0	.....	10.1	12.5	22.4	31.3	45.9	69.0	55.8	62.2	58.4
Infantile convulsions	50.3	82.9	2,857.1	1,556.5	157.8	233.4	82.4	69.8	52.2	47.6	38.5	31.8	29.8	18.8
Bronchitis	84.4	125.0	.....	245.9	170.0	357.9	147.3	180.2	105.7	116.0	64.5	87.3	46.0	62.1
Diarrhea and enteritis	1,124.0	1,241.4	2,142.9	1,397.6	1,335.4	1,771.0	1,809.9	1,720.1	1,437.4	1,445.0	879.9	1,054.2	728.5	739.7
Congenital malformations	115.3	674.9	10714.3	19496.8	388.5	1,947.6	247.1	454.5	148.7	175.8	54.3	88.1	38.5	51.1
Congenital debility, icterus, sclerema	174.5	416.6	7,857.1	6,951.8	934.8	1,433.3	496.8	556.0	206.1	229.1	46.4	87.1	33.6	39.4
Premature birth; injury at birth	66.3	2,404.1	17142.9	98575.5	995.5	5,047.6	142.3	447.4	37.8	54.8	3.4	10.7	.....	3.7
Other diseases peculiar to early infancy	14.6	266.7	3,571.4	10214.7	291.4	759.7	35.0	68.7	.....	.....	.....	.....	.....	.....
All other diseases and conditions	718.1	1,241.2	10714.3	11954.2	1,505.4	3,193.3	1,165.8	1,484.3	748.7	934.6	571.2	688.3	529.6	548.5

with rural surroundings; that many of them live in more or less congested quarters, and that as a group, their families are less well off, economically, than are those in the general population.

The very low deathrate for insured infants undoubtedly reflects the very considerable saving of life resulting from the care which acutely sick Metropolitan babies have enjoyed through the Company's Visiting Nurse Service, as well as the efficacy of the literature on infant care and feeding which the Company has distributed to Industrial policyholders.

SEASONAL INCIDENCE OF WATERBORNE TYPHOID FEVER.

Waterborne typhoid fever shows its maximum incidence at the colder seasons of the year; typhoid fever, spread through foods or by contact, has its point of maximum incidence in warmer weather. This is shown by an analysis of the typhoid fever data of Philadelphia, Pa. during the last twenty-five years. In the following table, and in the chart on page 5, we show the seasonal index for typhoid fever, first for the period 1899-1907, when most of the cases of the disease were traceable to polluted drinking water, and, second, for the period 1914-1924, after the water hazard had been very greatly mitigated.

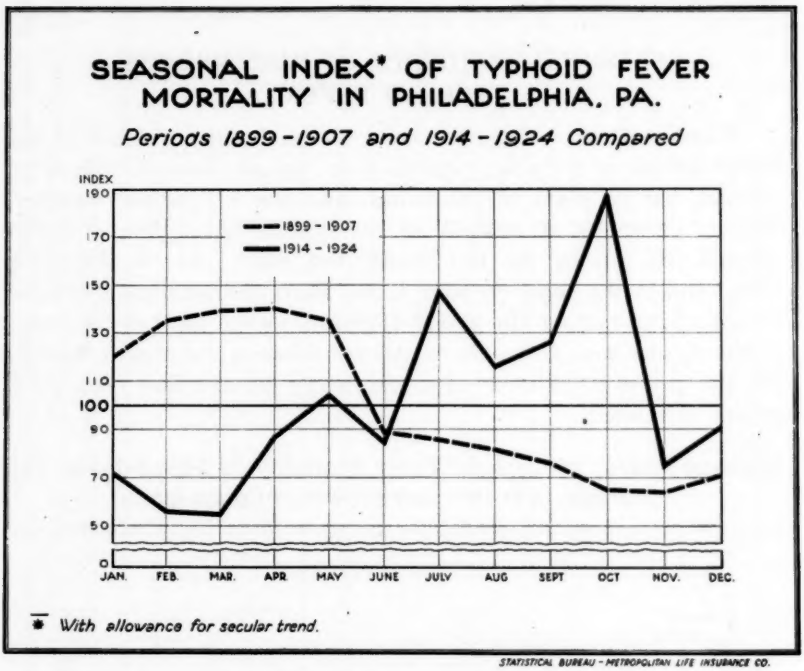
Seasonal Index* of Typhoid Fever Mortality in Philadelphia, Pa. Periods 1899-1907 and 1914-1924 Compared.

Month	1899-1907	1914-1924
January	120	72
February	135	56
March	139	55
April	140	87
May	135	104
June	89	85
July	86	147
August	82	116
September	76	126
October	65	187
November	64	75
December	71	91
Whole year	100	100

*With allowance for secular trend.

During the period when waterborne typhoid had widespread prevalence in Philadelphia, the rate was from 20 to 40 per cent. in

excess of the mean rate for the year during the months of January to May. The minimum rates during warm weather were from 10 to 35 per cent. below the mean annual figure during the months June to November. After adequate measures were taken to protect the Philadelphia water supply, the maximum rates occurred in the summer and early fall and minimum rates in the winter and early spring. The somewhat irregular contour of the seasonal curve during the eleven-year period 1914-1924 is due to the comparatively



small number of deaths recorded, an average of 79 per year, as compared with an average of 752 per year for the earlier period when the water hazard was heavy.

For the years earlier than 1899, the seasonal index has been computed for two groups of years, 1862-1881 and 1882-1898. During the first period there was a summer-autumn peak in the curve, and also a not very pronounced winter peak, centered in December. The second period (1882-1898) resembled the first, but exhibited a winter peak centered in January.

The curve for the last period, 1914-1924, resembles the curve for the first period, 1862-1881, but the summer-autumn peak is more

accentuated and the winter peak is less evident. The resemblance may be due to the fact that prior to 1881 the water for the city was taken largely from private wells, which were less contaminated than the public water supply used in later years.

VIRULENCE OF PREVAILING SMALLPOX IN 1925.

The smallpox prevalent in American and Canadian cities during the first six months of 1925 was nearly *four* times as deadly as the type of the disease which occurred in 1923! This year there were recorded 3.5 deaths for each 100 smallpox cases; in 1923, this figure was less than one death per 100 cases. In 1924, smallpox caused 1.5 deaths per 100 cases. The comparative record is shown below:

Cases, Deaths and Case-Fatality Rates, Smallpox, in 643 Cities in the United States and Canada, First Six Months of 1923, 1924 and 1925.

AREA	1925			1924			1923		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
United States and Canada (643 Cities)...	12,306	431	3.5	18,163	268	1.5	6,052	55	.9
United States (556 Cities).....	11,816	430	3.6	17,463	245	1.4	5,695	54	.9
Canada (87 Cities).....	490	1	0.2	700	23	3.3	357	1	.3

Figures for some cities are particularly high:

Cities Showing a Large Number of Smallpox Cases, or a High Case-Fatality During First Six Months of 1925.

SELECTED CITIES	CASES	DEATHS	DEATHS PER 100 CASES
Birmingham.....	1,583	6	.4
Los Angeles.....	1,589	10	.6
San Francisco.....	175	15	8.6
Chicago.....	52	11	21.2
Cedar Rapids, Iowa.....	65	12	18.5
Detroit.....	55	12	21.8
Minneapolis.....	416	144	34.6
Camden.....	97	44*	45.4
Philadelphia.....	183	22	12.0
Milwaukee.....	375	84	22.4

*Including eleven non-residents.

Birmingham, Alabama, had 1,583 cases, fortunately with few deaths. Camden, New Jersey, with 97 cases, 44 of which died, had the highest fatality rate in the list, namely 45 per cent. Smallpox in highly virulent form also prevailed in Minneapolis, Milwaukee, Detroit, and Chicago. While the number of cases was small in the latter two cities, the fatality rate, *i. e.*, deaths per 100 cases was high, indicating that if the health officials of these two cities had been less insistent upon city-wide antismallpox protection during the past two years, a heavy loss of life would have occurred.

The smallpox menace is real; the experience this year shows that the disease is present all over the United States in a death-dealing form. A considerable proportion of unvaccinated persons, and especially of children, in the population of any city is simply tinder for an epidemic which may cause hundreds of deaths, prolonged disability, the complete paralysis of industry and commerce and the impairment of the reputation of the city. How much longer will the American population tolerate a loathsome disease which is entirely avoidable and which has, year after year, increased its power to kill?

For the States and Provinces of the United States and Canada, including rural populations with less opportunity for the spread of the disease, the record of the first six months of 1925 shows 2.1 deaths per 100 cases, nearly twice the fatality rate prevailing in 1924 and three times the rate for 1923!

What of the future? Only thoroughgoing vaccination will protect the American and Canadian populations from an epidemic of deadly smallpox which, under present indications of indifference to vaccination, bids fair to rival the most destructive smallpox epidemics in public history. The choice between complete security from smallpox and a record which may well prove to be an indictment of our intelligence rests wholly with the people of the United States and Canada. Public health officials and the medical profession stand ready to administer vaccination—the only known means of preventing or stamping out the disease—whenever the prevailing indifference to and contempt for this simple, safe, and effective procedure is overcome by agencies of public instruction. At the present time, public health officials are often powerless to compel intelligent adults to safeguard themselves against this ancient enemy to life, and public security, except in times of immediate peril. And even then the efforts of conscientious public servants are frustrated by misleading propaganda from sources contrary to the national welfare.

HEALTH RECORD FOR AUGUST, 1925.

The August deathrate (7.5 per 1,000) is identical with that for the same month of last year which was the minimal figure ever recorded for August among the Industrial populations of the United States and Canada. The usual seasonal decline, as compared with the month of July, is in evidence.

Analysis of the table on page 11 shows that, with one or two rather important exceptions, the health picture among the American and Canadian wage-earning populations is a very satisfactory one.

Among the epidemic diseases of childhood, whooping cough is the only one to record an increase over August, 1924; but the deathrate for this disease is not high, and the cumulative rate for the year so far, like those for measles, scarlet fever, and diphtheria, is lower than for the corresponding periods of both 1923 and 1924.

The deathrate for tuberculosis in August (81.6 per 100,000), is the lowest ever recorded for that disease in that month; indeed, with a single exception (81.2 in November, 1924), this is the minimal monthly rate ever recorded for this disease. The deathrates for the principal degenerative diseases—cerebral hemorrhage, organic heart disease, and Bright's disease—are low and show a slight reduction as compared with August of last year.

While far from alarming, the typhoid fever rate is not quite as good as it was last year. August is the fifth of the first eight months of 1925 in which the deathrate for this disease has exceeded that for the corresponding month of 1924. The cumulative deathrate for typhoid for the year, up to September 5th, was 3.8 per 100,000, as compared with 3.6 for the corresponding period of last year. Measured by the standards of five or ten years ago, the above figures are very low. Nevertheless, it is now probable that 1925 will break the long chain of successive years during which a continuous decline has been registered for the typhoid fever deathrate.

The record for diseases and conditions connected with pregnancy and childbirth during 1925 has also been far from satisfactory. Up to September 5th, there had been no decline in the deathrate for these puerperal diseases as compared with last year, and deaths from puerperal septicemia, the most important numerically of this group, had shown a considerable increase over the 1924 record. The deathrate for puerperal diseases in August increased sharply over that for August, 1924, although a decline was registered as compared with July, 1925.

Fatal accidents decreased slightly as compared with July, but there was a small rise over the figure for August, 1924. Automobile fatalities showed a discouragingly high deathrate in August (18.4 per 100,000). This is one of the highest figures ever recorded among the Industrial populations of the United States and Canada, not only for August, but for any other month. During the week ended August 10th, 69 of these casualties were recorded, and this is the maximum for any week in the history of the Industrial Department. The cumulative deathrate for automobile fatalities is running higher than in any past year, and unless unexpectedly favorable developments take place before the end of the year, a new maximum will be recorded in 1925. There is information that in certain cities safety measures, applied with vigor, have been effective in reducing the automobile accident deathrate this year. If this is the case, it is obvious that much would be gained if communities where the rate is still increasing would study the measures which have been successful in reducing mortality in other places.

The general deathrate for the large cities of the United States in August was 10.8 per 1,000 population. This is the identical figure recorded for the previous month, but exceeds slightly the rate for August, 1924 (10.5). Compared with July, there was greater prevalence of diphtheria, influenza, malaria, poliomyelitis, and typhoid fever, with fewer cases of measles, scarlet fever, smallpox, and whooping cough. Compared with August, 1924, there was more sickness from influenza, malaria, poliomyelitis, typhoid fever, and whooping cough, with declines in diphtheria, measles, scarlet fever and smallpox.

Poliomyelitis has been very prevalent in certain portions of Wisconsin and in Minnesota. In the former, the southwestern counties bordering on the Mississippi River, have been affected most, although a few scattered cases have made their appearance in other counties.

Typhoid fever has shown increased prevalence in most of the states tabulated. This is, to some extent, a seasonal condition. In California, case reports increased from 75 in July to 142 for the first four weeks of August; in Illinois, from 178 to 254, and in Texas, from 154 to 236. In a small town in New Brunswick, five cases were traced to the water supply. There was a severe outbreak of the disease in Middlesboro, Kentucky. There have been many cases in Kansas, according to the State Board of Health.

The following table shows the mortality among Industrial policyholders for August, 1925; July, 1925; August, 1924 and the year 1924.

METROPOLITAN LIFE INSURANCE COMPANY.

Deathrates* per 100,000 for Principal Causes, Premium-paying Business in Industrial Department. (Annual Basis.)

MONTHS OF JULY, 1925; AUGUST, 1925, AND OF AUGUST, 1924.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED*			
	Aug., 1925	July, 1925	Aug., 1924	Year 1924
TOTAL—ALL CAUSES	747.2	810.5	746.2	905.2
Typhoid fever	6.9	5.2	6.1	4.4
Measles	1.4	3.9	1.7	7.2
Scarlet fever	1.8	2.2	1.8	4.4
Whooping cough	8.6	8.1	6.3	7.4
Diphtheria	5.1	6.6	5.8	13.1
Influenza	3.8	6.8	4.1	16.0
Tuberculosis (all forms)	81.6	95.6	92.9	104.2
Tuberculosis of resp'y system	70.3	84.0	80.6	92.3
Cancer	62.6	68.1	62.6	70.2
Diabetes mellitus	11.1	12.7	11.6	14.8
Cerebral hemorrhage	42.3	46.7	47.9	60.1
Organic diseases of heart	94.6	108.0	97.3	123.4
Pneumonia (all forms)	32.8	40.4	33.0	88.6
Other respiratory diseases	9.4	8.5	7.8	13.8
Diarrhea and enteritis	60.2	40.6	50.9	32.2
Bright's disease (chronic nephritis)	56.0	59.5	50.3	65.3
Puerperal state	13.9	14.7	12.2	16.8
Suicides	5.1	7.1	5.1	7.2
Homicides	6.6	6.6	7.3	7.1
Other external causes (excluding suicides and homicides)	69.7	73.5	68.1	62.5
Traumatism by automobile	18.4	17.9	15.1	15.7
All other causes	173.6	196.0	173.4	186.5

*All figures include infants insured under one year of age.

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STATISTICAL BULLETIN,
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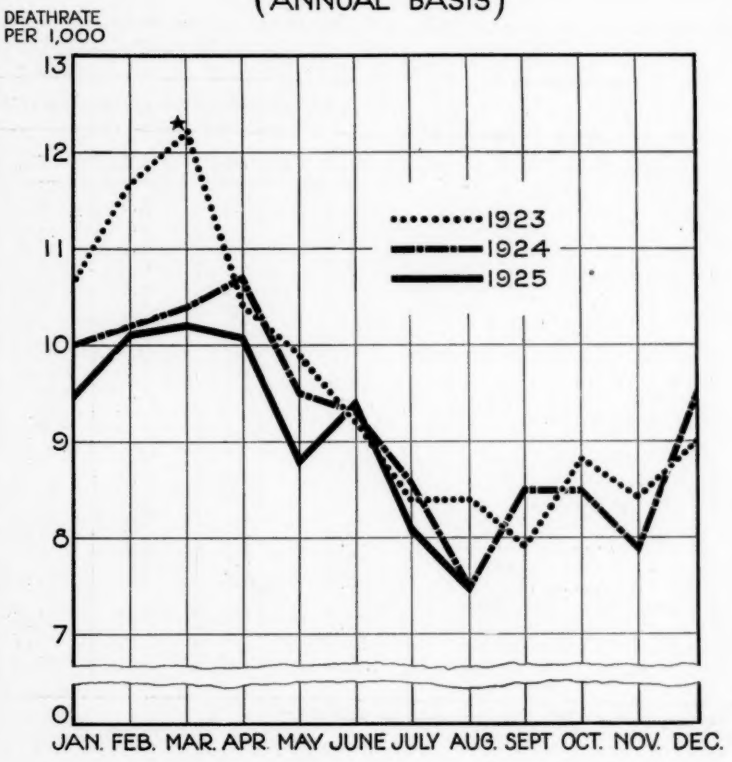
DEATHRATE PER 1000 *in* SPECIFIED MONTHS *of* 1923, 1924, 1925

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	1923	1924	1925		1923	1924	1925
JAN.	10.7	10.0	9.5	JULY	8.4	8.6	8.1
FEB.	11.7	10.2	10.1	AUG.	8.4	7.5	7.5
MAR.	12.2	10.4	10.2	SEPT.	7.9	8.5	
APR.	10.4	10.7	10.1	OCT.	8.6	8.5	
MAY	9.9	9.5	8.8	NOV.	8.4	7.9	
JUNE	9.2	9.3	9.4	DEC.	9.0	9.5	

★ *Beginning with March, 1923, figures include mortality of infants under one year of age.*

METROPOLITAN LIFE PRESS—77417—PRINTED IN U.S.A.